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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/653,203

09/03/2003

Jouko Kinnunen

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09/29/2006

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EXAMINER

LE, NHAN T

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/653,203

Applicant(s)

KINNUNEN ET AL.

Examiner

Nhan T. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons et al (US 5,839,096) in view of De Obaldia et al (US 2004/0148121).

As to claims 1, 11, Lyons teaches an RF testing method of an electronic device in conjunction with production of the electronic devices, the method comprising: measuring, by at least one sensor of a measurement arrangement, at least one RF property of the electronic device under test using at least one sensor outputting at least one measurement signal (see fig. 1, number 15, col. 6, lines 28-67, col. 7, lines 1-20), performing comparison between the at least one measurement signal and at least one corresponding reference signal (see fig. 1, number 17, col. 6, lines 28-67, col. 7, lines 1-20). Lyon fails to teach the arrangement which is part of a production line of the electronic device and determining a cause of the defects of the electronic device based on the comparison. De Obaldia teaches the arrangement which is part of a production line of the electronic device (see paragraph 0026-0030) and determining a cause of the defects of the electronic device (see paragraphs 0032-0035) based on the comparison. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of De Obaldia into the system of Lyons in

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order to perform the testing either by external low cost equipment or entirely on chip by means of dedicated digital hardware and/or software.

As to claims 2, 12, the combination of Lyons and De Obaldia further teaches comprising changing the states of the electronic device sequentially (see Lyons col. 15, lines 1-35), and performing comparison between the at least one measurement signal and the at least one corresponding reference signal related to the sequences of the states of the electronic device (see Lyons col. 15, lines 1-35).

As to claims 3, 13, the combination of Lyons and De Obaldia further teaches comprising performing comparison between at least one measurement signal and at least one corresponding reference signal representing an electronic device without defects, the comparison measuring similarity between the compared signals, determining the defectiveness of the electronic device as acceptable, if the similarity is higher than a predetermined threshold (see Lyons col. 15, lines 1-35), and determining the defectiveness of the electronic device as unacceptable, if the similarity is the same as the predetermined threshold or lower than the predetermined threshold (see col. 15, lines 1-35).

As to claims 4, 14, the combination of Lyons and De Obaldia further teaches comprising forming a comparison factor measuring similarity between the compared signals in the comparison, determining the defectiveness of the electronic device as acceptable, if the comparison factor has a higher value than a predetermined threshold value (see Lyons col. 16, lines 42-67), and determining the defectiveness of the electronic device as unacceptable, if the comparison factor has the same value as a

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predetermined value or a lower value than the predetermined threshold value (see col. 16, lines 42-67).

As to claims 5, 15, the combination of Lyons and De Obaldia further comprising performing comparison between the at least one measurement signal and at least one corresponding reference signal representing an electronic device with at least one defect, the comparison measuring similarity between the compared signals, determining the defectiveness of the electronic device as unacceptable, if the similarity is the same as a predetermined threshold or higher than the predetermined threshold (see Lyons col. 17, lines 53-67, col. 18, lines 1-13), and determining the defectiveness of the electronic device as acceptable, if the similarity is lower than the predetermined threshold (see Lyons col. 17, lines 53-67, col. 18, lines 1-13).

As to claims 6, 16, the combination of Lyons and De Obaldia further teaches comprising forming a comparison factor measuring similarity between the compared signals in the comparison, determining the defectiveness of the electronic device as unacceptable, if the comparison factor has the same value as a predetermined threshold value or a higher value than the predetermined threshold value (see Lyons col. 17, lines 53-67, col. 18, lines 1-13), and determining the defectiveness of the electronic device as acceptable, if the comparison factor has a lower value than the predetermined threshold value (see Lyons col. 17, lines 53-67, col. 18, lines 1-13).

As to claims 7, 17, the combination of Lyons and De Obaldia further teaches comprising using a reference signal representing an electronic device with at least one known defect (see Lyons col. 17, lines 53-67, col. 18, lines 1-13), and determining the

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type of defect in the electronic device according to the at least one known defect (see Lyons col. 17, lines 53-67, col. 18, lines 1-13).

As to claims 8, 18, the combination of Lyons and De Obaldia further teaches comprising comparing at least two measurement signals for determining defectiveness of the electronic device (see Lyons col. 17, lines 53-67, col. 18, lines 1-13).

As to claims 9, 19, the combination of Lyons and De Obaldia further teaches wherein measuring further comprises at least one of the following: measuring audio, measuring analog signaling or digital signaling (see Lyons col. 6, lines 28-67, col. 7, lines 1-20), the measurement performed by at least one sensor outputting at least one measurement signal (see Lyons col. 6, lines 28-67, col. 7, lines 1-20).

As to claims 10, 20, Lyons teaches an RF testing method comprising: measuring , by at least one sensor of a measurement arrangement, at least one RF property of the device under test using at least one sensor outputting at least one measurement signal (see fig. 1, number 15, col. 6, lines 28-67, col. 7, lines 1-20), performing comparison between the at least one measurement signal and at least one corresponding reference signal (see fig. 1, number 17, col. 6, lines 28-67, col. 7, lines 1-20). Lyons fails to teach wherein the testing method is in conjunction with the mobile phone and determining a cause of the defects of the mobile phone based on the comparison. De teaches wherein the testing method is in conjunction with the mobile phone (see paragraph 0012) and determining a cause of the defects of the mobile phone based on the comparison (see paragraphs 0032-0035) based on the comparison. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide

the teaching of De into the system of Lyons in order to perform the testing either by external low cost equipment or entirely on chip by means of dedicated digital hardware and/or software.

Response to Arguments

2. Applicant's arguments filed 07/12/2006 have been fully considered but they are not persuasive.

As to claims 1, 11, Applicant argues that Lyons reference fails to teach the device under test which is not part of the production line of electronic devices and the cause of the defects of the electronic device based on the comparison. The examiner agrees. However, the combination of Lyons and De teaches the claim limitation, specially De reference teaches wherein the device under test which is a part of the production line of electronic devices (ie. an on-chip test mechanism for transceiver power amplifier and oscillator frequency for use with transmitter portion of an integrated RF transceiver; see De paragraphs 0026-0030) and the cause of the defects of the electronic device based on the comparison (ie. the square wave output from the comparator is normally at the output frequency of 2.4 GHz, the test modulation causes certain frequency deviation in the local oscillator signal used to generate the transmitted signal see De paragraphs 0032-0035).

As to claims 10, 20, the combination of Lyons and De teaches determine a cause of the defects of a mobile phone (ie. several RF bands are addressed by the transmitter , such as the case of a cellular phone handset, the square wave output from the comparator is normally at the output frequency of 2.4 GHz, the test modulation causes

certain frequency deviation in the local oscillator signal used to generate the transmitted signal see De paragraphs 0012, 0032-0035).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

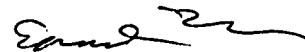
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nhan Le



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